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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,595	11/01/2002	Darin R. Okerlund	125974	2440
23413	7590	06/06/2005	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			SMITH, RUTH S	
			ART UNIT	PAPER NUMBER
			3737	

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/065,595

Applicant(s)

OKERLUND ET AL

Examiner

Ruth S. Smith

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 16-30 and 34-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 16-30 and 34-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/405
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Objections

Claim 37 is objected to because of the following informalities: A period should be inserted at the end of claim 37. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6,9-13,16-30,37,40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okerlund et al in view of Ockuly. Okerlund et al disclose a method of planning cardiac interventional procedures wherein cardiac image data is obtained as a means of planning the procedure. Okerlund et al disclose using known post-processing tools for performing advanced vessel analysis and volume rendering such as (AVA) and (CARDIQ) and GE "CardIQ" and uAdvanced Vessel Analysis" product descriptions. Okerlund et al fails to specifically disclose imaging the coronary sinus. It is well known in the art that interventional procedures are performed in the heart whereby the coronary sinus is involved in the procedure. Ockuly discloses the use of a coronary sinus catheter for providing an interventional procedure such as pacing or fibrillation. It would have been obvious to one skilled in the art to have modified Okerlund et al such that the cardiac image data obtained includes data regarding the

coronary sinus such that a well known interventional procedure involving the cardiac sinus can be planned and carried out.

Claims 1-6,9-13,16-28,30,37,40 are rejected under 35 U.S.C. 103(a) as being unpatentable over unpatentable over Keidar in view of Subramanyan et al, Chen et al (WO 96/10949) and Ockuly. Regarding claims 1-13, 16-28 and 30, Keidar discloses a system and method for generating a 3D model for use in cardiac interventional planning procedures (such as ventricular pacing planning or atrial fibrillation planning) including everything except for a database, an operator interface and a post-processing system for inserting a geometrical marker and selecting a viewable parameter. See fig. 1, 6 and 7 and elements 48 and 49. Subramanyan et al. disclose a method and apparatus for interventional procedure planning (such as placement of a stent) using a user interface (44) and a post-processing system (40, 48) for marker (72, 280) placement and viewable parameter selection (fig. 9-11). Subramanyan also discloses saving a viewable image, anatomical landmark, etc. (34, 46) to be exported to user interface (44). See fig. 1. Subramanyan further discloses wherein the post processing software further performs image rendering (242) and vessel tracking along a centerline (82). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to employ the user-interface and post-processing software of Subramanyan et al. in the invention as taught by Keidar to enable vascular tracking and visualization in 3D from multiple directions (Subramanyan, col. 2 lines 25-27) and to allow intuitive graphical feedback and interaction with the physician (Subramanyan, col. 2 lines 39-42) when administering treatment in regions which are difficult to mentally visualize (cp. Keidar, col. 1 lines 12-27). Furthermore, although Subramanyan discloses saving the image data, a database is not addressed explicitly. Chen et al. discloses a system and method for anatomical visualization of structures demonstrating that image databases (e.g., 10) are well known and can be used for independently. It is well known in the art that interventional procedures are performed in the heart whereby the coronary sinus is involved in the procedure. Ockuly discloses the use of a coronary sinus catheter for providing an interventional procedure such as pacing or fibrillation. It would have been obvious to one skilled in the art to have further modified Keidar et al such that the cardiac image data obtained includes data regarding the coronary sinus such that a well

known interventional procedure involving the cardiac sinus can be planned and carried out.

Claims 7,8,34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okerlund et al in view of Ockuly as applied to claims 1,16 above, and further in view of Liu et al. Liu et al disclose angiographic imaging which includes vessel tracking. The vessel tracking includes determining whether an arterial phase or a venous phase contrast study is under review. Liu et al disclose that the vessel segmentation can be performed using any known post-processing technique. In the absence of any showing of criticality or unexpected result, the specific segmentation technique used would have been an obvious design choice of known equivalents in the art. It would have been obvious to one skilled in the art to have further modified Okerlund et al to include vessel tracking which allows one to determine whether an arterial phase or a venous phase contrast study is being conducted in order to locate the vessel of interest.

Claims 7,8,34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keidar in view of Subramanyan et al, Chen et al (WO 96/10949) and Ockuly as applied to claims 1,16 above, and further in view of Liu et al. Liu et al disclose angiographic imaging which includes vessel tracking. The vessel tracking includes determining whether an arterial phase or a venous phase contrast study is under review. Liu et al disclose that the vessel segmentation can be performed using any known post-processing technique. In the absence of any showing of criticality or unexpected result, the specific segmentation technique used would have been an obvious design choice of known equivalents in the art. It would have been obvious to one skilled in the art to have further modified Okerlund et al to include vessel tracking which allows one to determine whether an arterial phase or a venous phase contrast study is being conducted in order to locate the vessel of interest.

Claims 38,39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okerlund et al in view of Ockuly and Liu et al. Okerlund et al disclose a method of planning cardiac interventional procedures wherein cardiac image data is obtained as a means of planning the procedure. Okerlund et al disclose using known post-processing

tools for performing advanced vessel analysis and volume rendering such as (AVA) and (CARDIQ) and GE "CardIQ" and uAdvanced Vessel Analysis" product descriptions. Okerlund et al fails to specifically disclose imaging the coronary sinus or the vessel tracking as set forth. It is well known in the art that interventional procedures are performed in the heart whereby the coronary sinus is involved in the procedure. Ockuly discloses the use of a coronary sinus catheter for providing an interventional procedure such as pacing or fibrillation. It would have been obvious to one skilled in the art to have modified Okerlund et al such that the cardiac image data obtained includes data regarding the coronary sinus such that a well known interventional procedure involving the cardiac sinus can be planned and carried out. Liu et al disclose angiographic imaging which includes vessel tracking. The vessel tracking includes determining whether an arterial phase or a venous phase contrast study is under review. Liu et al disclose that the vessel segmentation can be performed using any known post-processing technique. In the absence of any showing of criticality or unexpected result, the specific segmentation technique used would have been an obvious design choice of known equivalents in the art. It would have been obvious to one skilled in the art to have further modified Okerlund et al to include vessel tracking which allows one to determine whether an arterial phase or a venous phase contrast study is being conducted in order to locate the vessel of interest.

Response to Arguments

Applicant's arguments filed 3/3/05 have been fully considered but they are not persuasive. Interventional cardiac procedures involving the coronary sinus are old and well known and therefore, modification of the imaging systems which obtain cardiac data to image the coronary sinus would have been obvious to one skilled in the art.

Conclusion

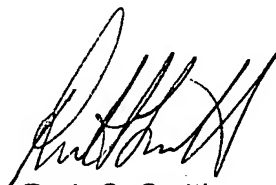
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruth S. Smith whose telephone number is 571-272-4745. The examiner can normally be reached on M-F 7:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ruth S. Smith
Primary Examiner
Art Unit 3737

RSS